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# State Bargaining with Transnational Terrorist Groups

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Several policymakers argue against negotiating with transnational terrorists because of the inability of terrorist groups to form credible commitments. To succeed in negotiation, terrorists must convince target governments that they are credible bargaining partners. This paper explores how constraints from host states affect the ability of terrorists to form credible commitments. If facing sufficient threats, host states may have an incentive to broker peaceful agreements. Hosts that have the ability to monitor and impose moderate costs on terrorist groups can increase the likelihood of negotiated settlements. The paper concludes with an empirical test of the model's hypotheses using data on transnational terrorism in the pre-9/11 period from 1968 to 1991.

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On June 14, 1985, two terrorists hijacked a Trans World Airlines (TWA) jet carrying 153 passengers and crew. The terrorists demanded the release of 766 Shiite prisoners from Israel in exchange for the American hostages. In response to the hijack, U.S. President Ronald Reagan publicly stated that he would never negotiate with terrorists. Privately, however, U.S. officials asked the Israeli government to release the prisoners in exchange for the American hostages. On June 30, the American hostages were released. The following day, the Israeli cabinet freed 300 Shiite prisoners.<sup>1</sup>

The case of the TWA hijacking raises the question: Why do states negotiate with transnational terrorists despite the conventional wisdom not to do so? Why are states willing to trust that certain terrorists are credible bargaining partners? This study develops a game theoretic model to examine the conditions under which negotiation can succeed. Specifically, the model examines how terrorists utilize institutional constraints created by host states to establish credibility. While the model predicts that successful negotiation is rare, the likelihood of negotiation increases if terrorists are constrained by a moderately powerful host state, such as a state sponsor. The model's hypotheses are subsequently tested using International Terrorism: Attributes of International Terrorist Events (ITERATE) data in the pre-9/11 period from 1968 to 1991.

## Literature Review

Proponents of the “no concessions” policy offer two reasons for refusing to negotiate with terrorists. The central argument is that negotiation rewards terrorists

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<sup>1</sup> This account is taken from Mickolus, Sandler, and Murdock (1989). *International Terrorism in the 1980s*, Vol. II. Ames: Iowa State University Press.

for violent behavior (Lacqueur 1977; Netanyahu 1986; Clutterbuck 1992; Chellany 2001; Pillar 2001). If groups believe they can accomplish their goals through violence, terrorists will continue to use violence in the future. On the other hand, if targets offer no concessions, terrorists have no incentive to attack. Although this argument retains some popularity, many scholars criticize its plausibility. Several studies demonstrate that “no concessions” fails to convince terrorists that states will not ultimately negotiate if attacked (Atkinson, Sandler, and Tschirhart 1987; Sandler and Scott 1987). Lapan and Sandler (1988) demonstrate that the “no concessions” policy is time inconsistent, meaning that states are often unable to sustain “no concessions” policies.<sup>2</sup> Empirical studies indicate that despite publicly adopting the “no concessions” stance, several states do negotiate with terrorists. From 1968 to 1991, negotiation was attempted in over half of the cases of terrorist events involving hostage taking (Mickolus et al. 2000). Further evidence demonstrates that even the most ardent supporters of “no concessions” often break with this policy (Poe 1988; Tucker 1998). Several additional studies conclude that maintaining “no concessions” is an inefficient strategy (Shahim and Islam 1992; Sederberg 1995).

These studies establish that negotiation can be beneficial for both the target and the terrorists. As negotiation is mutually beneficial, a negotiated settlement should be preferred to continued violence (Fearon 1995; Powell 2002). Yet, despite the potential for mutual gain, negotiation frequently fails. The central obstacle to negotiation between targets and terrorists is the perceived inability of terrorists to form credible commitments (Walter 1997; Kydd and Walter 2002). A key barrier to successful negotiation is that governments usually distrust militants and expect them to break their promises. No enforcement mechanism exists to punish terrorists for renegeing on their commitments. If terrorists face no costs for breaking agreements, targets have no reason to believe that terrorists will abide by their commitments (Lake and Rothchild 1998; Leeds 1999). For example, suppose a situation in which terrorists demand the release of a leader in exchange for disarmament. While negotiation is beneficial, the terrorists should prefer to obtain the leader’s release without disarming. If the terrorists were to renege, they would not be subject to any punishment cost. Therefore, the terrorists’ best strategy is to demand concessions, take whatever the target concedes, and subsequently renege on their promises.

This suggests that if terrorists want to negotiate, they must find some mechanism to convince targets that defection is not costless. To establish such credibility, terrorists might honor promises in order to establish a reputation for trustworthiness (Lapan and Sandler 1988). If governments know that terrorists care about their reputation, governments might believe that terrorists will abide by their promises. However, targets may not know whether a group has an interest in maintaining a reputation for trustworthiness. Many terrorist groups do not survive long into the future (Schmid and Jongman 1988). If a long shadow of the future does not exist, terrorists have no reason to invest in a trustworthy reputation. As targets are uncertain as to a group’s durability, promises made on the basis of maintaining a good reputation may not convince a government to negotiate.

If reputation alone does not suffice, terrorists require some other enforcement mechanism to establish credibility. To certify credibility in the absence of long-term interaction, bargaining partners often rely on external enforcement. Under legal institutions, courts protect transactions by establishing punishments for breaking contracts. As parties in negotiation recognize that defection will bring legal punishment, both parties will uphold the bargain. Without reputation, terrorists require a similar institution to constrain them from defecting. However, terrorists are typically seen as organizations outside any institutional control or enforcement

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<sup>2</sup> In other words, although a “no concessions” strategy may be a Nash equilibrium in a repeated game setting, it is not subgame perfect.

mechanism. While this characterization may be true generally, some terrorists do face a type of institutional constraint. A key constraint faced by transnational terrorists is their ties to their host state. Many transnational terrorists rely on foreign territory to conduct their operations. Given that terrorists' base lies within the host's territory, the group is technically subject to the host's legal jurisdiction. With sufficient political capacity, hosts may influence a group's behavior and ability to operate (O'Brien 1996).

In some cases, groups may operate without constraints from a host state even if the group uses transnational operations. It is doubtful whether weak states, such as Afghanistan, are able to influence their "guests." However, in other cases, terrorists are heavily constrained by their hosts. In the 1960s, Cuban exiles operating against Fidel Castro were extremely dependent on American assistance (Prados 1996). Similarly, state sponsors of terrorism, such as Iran and Syria, directly influence terrorists' ability to operate (Ranstorp and Xhudo 1994). Sponsors influence their groups by controlling weapons supplies, funding, and political support. Using this influence, the host can, to a varying extent, constrain terrorist behavior. As groups may depend on the support of their hosts, they are constrained by their host's willingness to allow terrorist activity to continue.

This raises the question: Can constraints from host states provide sufficient credibility to transnational terrorists in negotiation? In the following section, I develop a model to examine how constraints from host states affect the ability of terrorists to establish credibility in negotiation. The model identifies the conditions under which hosts can or cannot contribute to successful negotiation.

### Bargaining in Transnational Terrorist Events

Figure 1 presents a three player game to model a terrorist event. Player *s* is the target state. Transnational terrorist group *t* operates from the territory of foreign host *h*.

*Assumptions:*

- i.  $C_s + C_t = 1$
- ii. For target,  $1 \geq SQ_s \geq \delta SQ_s \geq 0$
- iii. For terrorists,  $1 \geq SQ_t \geq \delta SQ_t \geq 0$

Prior to the start of the game, the terrorists attack the target. The game begins when the target has the opportunity to negotiate with the terrorists. The target may offer a settlement  $C_t$  to the terrorists. In exchange, the target demands concessions  $C_s$  from the terrorists.<sup>3</sup> We can think of this exchange as the target agreeing to some of the terrorists' demands (regional autonomy, release of prisoners, etc.) in exchange for concessions from the terrorists (disarmament, release of hostages, etc.). Regardless, negotiation requires both the target and the terrorists to exchange concessions.

Although terrorists demand concessions, terrorists do not have equal status in bargaining. Frequently, targets will refuse to negotiate with terrorists, instead referring to them as common criminals, bandits, or thugs. It is necessary for the target

<sup>3</sup> Negotiation is represented by the division of  $C$ .  $C_s$  represents the concessions given by the group to the target state. An example of  $C_s$  might be the termination of a campaign or the release of hostages. The concessions given to the group by the state is represented by  $C_t$ . Examples of concessions made by the state may include ransom or the release of political prisoners. I assume that  $0 \leq C \leq 1$ . The maximum either player may receive is 1, indicating that the opponent unconditionally capitulates. I assume that no portion of  $C$  is unused, specifying that  $C_s + C_t = 1$ .

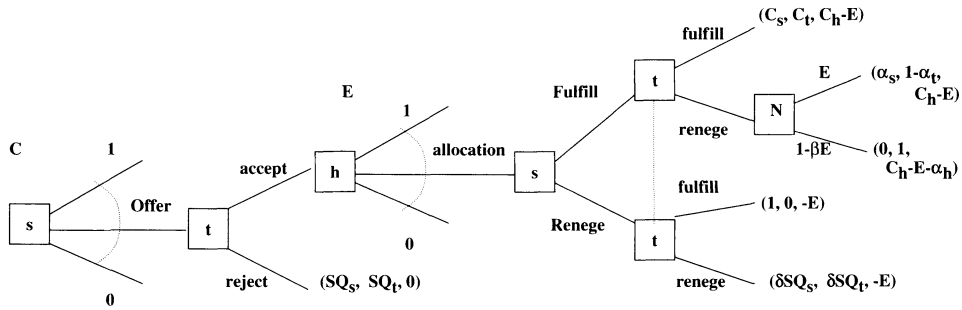


FIG. 1. Terrorist Event Bargaining Game

- $C_s$  negotiation benefit for target
- $C_t$  negotiation benefit for terrorists
- $C_h$  negotiation benefits for host
- $SQ_s$  status quo value for target
- $SQ_t$  status quo value for terrorists
- $E$  enforcement payment
- $\beta$  host capacity
- $\alpha_s$  punishment benefit for target
- $\alpha_t$  punishment penalty for terrorists
- $\alpha_h$  punishment penalty for host

to grant the terrorists legitimacy as a bargaining partner for negotiations to take place, even if only tacitly (Zartman 1995; Rupesinghe and Anderlini 1998). The target is therefore given the power to propose an exchange with the terrorists. The target may demand unconditional capitulation by setting  $C_t = 0$ . The alternative is to offer the terrorists some  $C_t > 0$  in order to induce cooperation.

Once the target makes an offer, the terrorists decide whether to accept or reject. If the terrorists reject, the game ends in a violent continuation of the event. The payoffs at this node are  $(SQ_s, SQ_t, 0)$ . Alternatively, if the terrorists accept, the game moves from negotiation to the fulfillment stage. Both the target and the terrorists now decide whether or not to fulfill their obligations. Prior to this decision, the host has the opportunity to establish itself as a guarantor of terrorist behavior by enforcing the terrorists' compliance with an agreement. The host receives a payoff of  $C_h$  only if the target fulfills its obligations. Several hosts may place little value on inducing the target to cooperate. In cases in which the host and the target are rivals, hosts may actually benefit by allowing terrorists to attack. In these cases,  $C_h = 0$ , indicating that the host gains nothing from target cooperation. However, it is also reasonable to believe that several hosts may prefer peaceful resolution to terrorist events. Hosts may receive compensation from the target, such as economic or military aid.<sup>4</sup> Facilitating peace might also improve the host's international reputation and lead to future benefits. In other cases, the host may cooperate out of fear of target retaliation. Through diplomatic, economic, or military action, targets can threaten to punish hosts for the actions of their terrorists. While terrorists can disappear to avoid such punishment, host states have visible and tangible assets which may be attacked by target states. Hosts may therefore have incentives to facilitate peace in order to avoid such retaliation.

If the host chooses to facilitate peace, it may devote a certain level of resources  $E$  toward monitoring the terrorists. As the host devotes greater resources to monitoring, it is more likely to detect if the terrorists renege on their commitments.

<sup>4</sup> For example, in 1989, Libyan leader Muammar Qaddafi brokered a settlement between France and the Abu Nidal organization in which three French hostages were released. French President Mitterand rewarded Qaddafi's cooperation by delivering three Mirage fighter jets to Libya.

However, monitoring also comes with a cost. The payoff for the host will be reduced by the amount of resources it devotes to monitoring. Therefore, if the host induces target cooperation, its payoff would be  $C_h - E$ . If the target reneges, the host receives a payoff of  $-E$ .

Following the host's allotment of monitoring resources, the game becomes a modified prisoners' dilemma between the target and the terrorists. Both must simultaneously decide whether to fulfill their commitments. If both sides fulfill their obligations, successful implementation occurs. On the other hand, if both sides defect, both sides receive a discounted value for the violent continuation of the terrorist event. The fulfillment subgame deviates from a typical prisoners' dilemma as a result of the payoffs to both sides for unilateral defection. Like the typical prisoners' dilemma, the target's best possible outcome occurs if the target reneges on its commitment while the terrorists fulfill. If this occurs, the target receives concessions while making none in return.<sup>5</sup> However, if the terrorists sucker the target, the terrorists are not necessarily better off, as the ability of terrorists to sucker the target is constrained by the intervention of the host. The effectiveness of the host's constraints is a function of the amount of resources  $E$  a host devotes to monitoring and the host's capacity  $\beta$  to use these resources efficiently. While  $E$  is the amount of resources devoted by the host, the  $\beta$  term serves to either discount or enhance the value of the host's resources devoted to monitoring and enforcement. High values of  $\beta$  correspond to strong hosts, such as Iran. However, if the host is weak, such as Sudan, the value of  $\beta$  diminishes.

If the terrorists renege, the group is caught with probability  $\beta E$  and escapes detection with probability  $1 - \beta E$ . If the terrorists are caught, the host imposes a penalty  $\alpha_t$  on the terrorists for breaking their commitment. At this outcome, the target may receive some compensatory benefit  $\alpha_s$  from the host's punishment of the terrorists.<sup>6</sup> To capture the different political situations within the target, I allow the value for this compensation to vary. In cases where punishment provides little value to the target, the value of  $\alpha_s$  may be close to zero. This indicates that the target would only benefit from successful negotiation. On the other hand, if the host's punishment of the terrorists provides some compensatory value to the target, the value of  $\alpha_s$  increases. For example, if negotiation fails, a target may benefit if the terrorists are imprisoned, extradited, or killed by the host. The payoff at the outcome in which the target complies and the terrorists are punished is therefore  $(\alpha_s, 1 - \alpha_t, C_h - E)$ .<sup>7</sup> As the target cooperates, the host gains the benefit  $C_h$ .

However, if the terrorists escape punishment, this represents the worst possible outcome for the target, and the best for the terrorists. If the terrorists are not punished for defecting, the target imposes a punishment  $\alpha_h$  on the host for failing to control the group. The target's punishment may include international condemnation, economic sanctions, or a military strike. If any of these actions causes significant damage to the host, the value of  $\alpha_h$  will be high. On the other hand, if the damage of such countermeasures is insignificant to the host,  $\alpha_h \rightarrow 0$ . The payoffs at this outcome are therefore  $(0, 1, C_h - E - \alpha_h)$ .

In the following section, I identify the conditions under which successful negotiation takes place using the subgame perfect equilibrium solution. The model dem-

<sup>5</sup> I normalize the best possible payoff for the state and the terrorist group to 1 and the worst possible outcome for both the state and the terrorist group to 0.

<sup>6</sup> For example, on September 6, 1970, members of the Popular Front for the Liberation of Palestine (PFLP) hijacked three Western airplanes and ordered the planes to fly to Jordan. Following an agreement by the United Kingdom to release a political prisoner, the PFLP destroyed the three hijacked jets and kept control of its hostages. In response, the government of Jordan resorted to military force to push the PFLP and other Palestinian militants out of its territory.

<sup>7</sup> While  $\alpha_s$  would be positive in the two examples outlined, I do not restrict the value of  $\alpha_s$  to a positive value. It may be the case that even if the terrorists are punished, the target values this outcome less than if no agreement was formed in the first place. In this case,  $\alpha_s$  may take on a negative value.



		Terrorist Group	
		fulfill	renege
Target	Fulfill	$C_s, C_t$	$\beta E \alpha_s + (1-\beta E)0, E(1-\alpha_t) + (1-\beta E)1$
State	Renegé	1, 0	$\delta SQ_s, \delta SQ_t$

FIG. 2. The Fulfillment Subgame

onstrates that host intervention can, under certain conditions, increase the likelihood of peaceful resolution. However, the model also demonstrates that excessive host constraints may undermine the chances of a successful negotiated settlement.

### Terrorist Groups and Credible Commitments

A notable finding from the model is the difficulty in creating a situation in which bargaining occurs.<sup>8</sup> In most cases, negotiation during terrorist events does break down. However, if a host fears a reprisal, the host may compel its terrorists to comply with agreements. Once the host threatens to punish the terrorists for defecting, terrorists have an incentive to comply with agreements. As terrorists now face a cost for defection, targets may trust that constrained terrorists are credible bargaining partners (Fig. 2).

To demonstrate this result, consider the subgame in which the target and the terrorists decide whether or not to fulfill their obligations. First, I assume that the host devotes no resources to policing and that  $E = 0$ . If this is the case, the payoffs for both the target and the terrorists at the (Fulfill, renege) outcome alter to (0, 1). Under these circumstances, both the target and the terrorists have dominant strategies to renege. If defection is costless, the terrorists always defect. Targets are aware that terrorists will always defect, and therefore always defect as well. As both sides know that they will not fulfill their commitments, they do not commit to an agreement.

To induce negotiation, the host must devote resources to policing the terrorists. If the host sets  $E$  high enough, host intervention can eliminate (Renegé, renege) as a pure strategy equilibrium. If terrorists defect, a target will prefer to fulfill its commitment if:

$$E^* = \frac{\delta SQ_s}{\beta \alpha_s} + \epsilon. \tag{1}$$

If the host makes this commitment, two possibilities might occur. One possibility is that (Fulfill, renege) forms a Nash equilibrium in the fulfillment subgame. If this is the case, the target will refuse to make an offer in equilibrium. It makes little sense for the target to make an offer if it knows that the terrorists will defect, even if it will be compensated. To illustrate this, consider the target’s payoffs for refusing negotiation versus its payoff at the outcome (Fulfill, renege). By refusing negotiation, the target receives  $SQ_s$ . On the other hand, if the target negotiates and the two sides play (Fulfill, renege), the target’s payoff is  $\delta SQ_s$ . As by assumption,  $SQ_s > \delta SQ_s$ , we see that a target never negotiates if it knows the terrorists will ultimately renege. Unless there is some chance of negotiation success, the target always adopts a “no concessions” stance.

If the target cooperates, the terrorists reject agreements if  $C_t < 1 - \beta E \alpha_t$ . However, as the target sets  $C_t$  in its first move, the target can remove the terrorists’

<sup>8</sup> The derivation of the model’s hypotheses is located in the Appendix.

dominant strategy to defect by offering an adequate level of concessions. The target breaks the terrorists' dominant strategy to defect by setting:

$$\begin{aligned} C_t &\geq 1 - \beta E\alpha_t, \\ C_t^* &= 1 - \beta E\alpha_t + \varepsilon. \end{aligned} \tag{2}$$

If the target offers  $C_t^*$ , the players adopt mixed strategies. Under these conditions, successful negotiation occurs with some positive probability. Therefore, the target may have reason to negotiate. For negotiation to take place, both conditions 1 and 2 must be true. The host must agree to intervene and the target must set  $C_t = C_t^*$ . If the target offers  $C_t^*$ , the players adopt mixed strategies in the fulfillment subgame. Both the host's intervention and the target's decision to offer  $C_t^*$  are necessary to justify mixed strategies.<sup>9</sup> To make the terrorists indifferent between fulfilling their obligations and renegeing, the target plays Fulfill with probability:

$$p = \frac{\delta SQ_t}{\delta SQ_t + \beta E\alpha_t - C_s}.$$

In response, the terrorists will play fulfill with probability:

$$q = \frac{\delta SQ_s - \beta E\alpha_s}{\delta SQ_s - \beta E\alpha_s - C_t}.$$

We see the effect of host intervention on negotiation. Targets recognize that if unconstrained terrorists commit to negotiate, nothing prevents them from breaking their promises. The intervention of the host adds credibility to the terrorists by constraining the group from defection. If the host is willing to provide the target with acceptable compensation should the terrorists defect, the target can offer concessions to induce mixed strategies. Where the target offers nothing to unconstrained terrorists, targets are willing to bargain with constrained terrorists in mixed strategies.

However, the theoretical model indicates that host constraints do not monotonically increase the likelihood of successful negotiation. Instead, under certain conditions, constraints from the host can *decrease* the willingness of terrorists to negotiate. If the terrorists will be punished for defecting, targets can be reasonably sure that the terrorists will comply with their agreements. This gives the target an incentive to negotiate. However, if the target observes that terrorists always comply, the target now has an incentive to renege on agreements. To illustrate this point, suppose a case in which a host could perfectly monitor the group and threatened to execute terrorist leaders if they renege on a commitment. Given these constraints, the terrorists would almost certainly comply with its agreements. However, as the target knows that the terrorists always comply, the target is better off accepting concessions and subsequently renegeing on the agreement. The target would then receive concessions without making any of its own.

This can be formally demonstrated by examining the mixed strategy equilibrium. The target cooperates with probability  $p$ . Using comparative statics, we see that as  $\alpha_t$  increases, holding all else constant, the value of  $p$  decreases. This indicates that as the punishment to the terrorists for defecting increases, the probability that the target cooperates decreases. The host's constraints prevent terrorists from renegeing, but simultaneously give the target incentives to take advantage of the terrorists. Heavy constraints make the terrorists prisoners to their agreement, thereby inducing the target to opportunistically defect from agreements.

The model leads to the conclusion that the host's monitoring and enforcement capability exhibits a curvilinear effect on the likelihood of successful negotiation. If

<sup>9</sup> There are multiple equilibria in the game, but these moves by the target and the host are necessary to produce mixed strategies, which is the only condition under which cooperation is a possibility.



the host's capacity is too low, both sides will defect from any agreement. However, if the host's capacity is too high, the target will unilaterally defect. This leads to the conclusion that the likelihood for successful negotiation is highest when the host's monitoring and policing power are at median levels. At median values, the host has enough capability to prevent the terrorists from defecting, but not enough to completely tie the hands of the terrorists and induce the target to break its commitments.

**Hypothesis 1:** *The likelihood of successful negotiation is highest when the ability of the host to monitor and punish its terrorists is at median values.*

A moderate host with the capacity to monitor and enforce can be critical in fostering a negotiated solution. We see that as the value of cooperation to the host increases, the host is more likely to intervene. For the host to induce mixed strategies:

$$pq(C_h - E) + p(1 - q)[\beta E(C_h - E) + (1 - \beta E)(C_h - E - \alpha_h)] + (1 - p)(-E) \geq 0. \quad (3)$$

**Hypothesis 2:** *The likelihood of successful negotiation increases as the value of a negotiated settlement to the host state increases.*

However, the host is only a credible guarantor if there is some punishment for failing to police the terrorists. Without the threat of target punishment, hosts may have no incentive to pay the costs of monitoring and enforcement. The host will only do so if it wants to avoid the target's punishment for failed negotiation. If such punishment is severe, hosts will devote greater resources toward policing agreements. By doing so, the host decreases the chance that noncompliant terrorists escape detection. We see that greater potential punishment from the target adds to the host's credibility as a guarantor. Hosts that face target retaliation will devote more resources to enforcement in order to avoid such a response. The target's threat forces the host to credibly monitor its terrorists, which in turn may compel the terrorists to credibly fulfill their obligations.

**Hypothesis 3:** *The likelihood of successful negotiation increases as the host's punishment for failed negotiation increases.*

If the host can credibly monitor and punish its terrorists, the target may consider negotiating at the beginning of the game. Once the terrorists face potential punishment for defection, promises by terrorists may no longer be deemed as credible. If the target receives the host's signal of terrorist credibility, a target would become more likely to make concessions, particularly if the violent continuation of the event is politically costly.

**Hypothesis 4:** *The likelihood that a target will commit to an agreement increases as the ability of the host to monitor and punish its terrorist groups increases.*

**Hypothesis 5:** *The likelihood that a target will commit to an agreement increases as the political costs associated with the continuation of a terrorist event increases.*

However, recall that if the host's monitoring and enforcement power grew excessive, the target becomes more likely to unilaterally renege. If the terrorists recognize that the host will tie their hands, terrorists know that the target will renege at the fulfillment stage. Therefore, the terrorists should refuse to form an agreement that leaves them vulnerable. Again, we see that the host's monitoring and enforcement power must be great enough to convince the target of the terrorists' credibility, but not so strong as to induce the target to defect at the

fulfillment stage. We can therefore conclude that the likelihood of getting an agreement is at its highest point when the host state's monitoring and enforcement power is at median levels.

**Hypothesis 6:** *The likelihood that the terrorists will accept the target's proposal is at its highest when the host's ability to monitor and punish is at median levels.*

The model reveals that for negotiation to take place, the host must establish credibility for the terrorists without completely tying their hands. Heavy constraints make terrorists *more* likely to fulfill agreements, but *less* likely to form agreements. At the same time, heavy constraints make target states *more* likely to form agreements but *less* likely to fulfill them. This difficult balance reveals why it is that negotiation with terrorists is often unsuccessful. A host must convince the target that the terrorists will be punished for defecting, but must also convince the terrorists that an agreement will not leave them vulnerable to exploitation.<sup>10</sup>

Empirically, the model leads to the conclusion that the ideal host to facilitate negotiation matches the description of state sponsors of terrorism. This conclusion refines the argument of many terrorism scholars that state sponsors tend to increase the danger associated with terrorists (Jenkins 1986; Hoffman 1999; Lesser et al. 1999). Although sponsorship may increase the capabilities of terrorists, sponsors are ideal for negotiation for several reasons. While sponsors have substantial power to punish terrorists, sponsors may have an interest in maintaining the group as a viable entity. This alleviates the group's concerns that punishments will be excessive. On the other hand, if the terrorists are state sponsored, states should be willing to believe that the host has the capability to punish the group. Additionally, given the international scorn afforded direct state sponsors, targets may be able to punish the host significantly should negotiation fail. As sponsors have reason to fear punishment and have the capability to alleviate the concerns of both the target and the terrorists, sponsors may be ideal facilitators of peace. This suggests the counter-intuitive notion that if a target chooses to negotiate, state sponsored terrorists may be preferable to independent groups.

### Research Design

From the theoretical model, we see the effect of host institutional constraints on terrorist bargaining behavior. In this section, I test several of the model's hypotheses using a collection of hostage taking incidents from Mickolus, Sandler, Murdock, and Fleming's International Terrorism: Attributes of Terrorist Events data (ITERATE, Mickolus et al. 2000).<sup>11</sup> I restrict the analysis to hostage taking incidents as these incidents contain information about bargaining between targets and terrorists. The cases under scrutiny involve incidents in which terrorist groups seized property, hijacked aircrafts, seized groups of civilians, or engaged in kidnapping. The data include ITERATE hostage taking events from 1968 to 1991.<sup>12</sup> While the sample does not include the post-9/11 era, the pre-9/11 era provides a better test for some of the hypotheses because of the higher level of hostage taking during this time period.

<sup>10</sup> While terrorists monotonically benefit from higher compensation to the target, the benefits of accepting the target's proposal decreases as  $\alpha_t$  increases as long as  $\alpha_t < \alpha_v$ .

<sup>11</sup> Mickolus et al. define an international/transnational terrorist event as: "the use, or the threat of use, of anxiety inducing, extra-normal violence for political purposes by any individual or group, whether acting for or in opposition to established government authority, when such action is intended to influence the attitudes and behavior of a target group wider than the immediate victims of the status quo."

<sup>12</sup> A complete description of each of the cases may be found in Edward Mickolus, Todd Sandler, Jean Murdock, and Peter Fleming (2000), *Transnational Terrorism: A Chronology of Events*, Vols. I–III. Data for replication may be found at <http://www.personal.psu.edu/faculty/n/a/nab12/>.

ITERATE identifies both the target and terrorist group involved in the incident. The host is identified using ITERATE's information on the nationality of the terrorist group and the World Directory of Political Terrorism (Schmid and Jongman 1988). The host is defined as the terrorist group's nationality, country of origin, or current base of operations. In cases in which terrorists operated from stateless entities, such as the West Bank or Gaza Strip, the groups are assumed to be independent unless the groups received sponsorship. In such cases, the sponsor is considered the group's host state.<sup>13</sup>

#### *Method*

To test the hypotheses, I utilize a heckman probit model with exclusion restriction<sup>14</sup> (Heckman 1979; Reed 2000). I test hypotheses from both the commitment and the fulfillment stages of the game. In the first stage, the target and the terrorists make commitments to exchange concessions. Following their commitment, both parties decide whether to fulfill their obligations. I therefore create two dichotomous dependent variables: commitment and fulfillment. As it is not possible to fulfill an obligation without making a commitment, the dependent variable fulfillment is censored by the commitment variable. The selection equation in the model determines whether or not a commitment is made. Following the decision to commit, the second model examines whether or not the commitment is fulfilled. The fulfillment variable captures whether both the target and the terrorists abide by the terms of the negotiated settlement.

#### *Data and Variables*

The ITERATE Hostage File provides several indicators to gauge both commitment and fulfillment. To capture commitment, I examine the response of the target. This variable presents a list of government responses ranging from total capitulation to massive nationwide searches for terrorists. The first three responses, capitulation, stalling with compromise, and Bangkok solution,<sup>15</sup> all represent forms of negotiation. Additionally, a fourth response labeled, "government double-cross" also indicates that a commitment was formed between the target and the terrorists. If the target responds in one of these four ways, the variable commitment is coded as 1. If this criterion is not met, the commitment variable is coded as 0.

The second variable captures whether or not agreements were fulfilled. The fulfillment variable is determined by two factors: the fate of the hostages and the terrorists' success in negotiation. I examine the variables "First and Second Hostage Fate" to determine whether the terrorists abide by agreements. If the incident ends with government negotiation followed by the release of hostages, the terrorists have fulfilled their obligation. If the terrorists receive at least partial concessions, the target is considered to fulfill its commitment (Sandler and Scott 1987). If both the hostages are returned and the terrorists receive compensation, the fulfillment variable is coded 1, indicating a successful negotiation. Otherwise, the fulfillment variable is coded 0.

<sup>13</sup> In several cases, terrorists may have different hosts at different points in time. For example, the Abu Nidal Organization based its operations in Lebanon, but subsequently moved to Libya. In cases such as these, the state which the terrorist group used as its primary base of operations at the time of the event is considered the group's host state.

<sup>14</sup> The hostages variable is in the selection equation, but not in the fulfillment equation.

<sup>15</sup> The Bangkok solution refers to a situation in which Thai officials allowed Black September terrorists occupying the Israeli embassy in Bangkok safe passage from the scene in exchange for the release of their hostages and the dropping of other demands.

*Independent Variables*

The variables included in the selection equation include host capacity, host benefit for cooperation, and the target's value for cooperation:

$$\text{Commit} = \text{Host Capacity} + \text{Host Capacity}^2 + \text{Strategic Similarity} \\ + \text{Peace Years} + \text{Number of Hostages.}$$

The critical variables in the model are  $\beta$  and  $\alpha$ , or the ability of the host to monitor and punish its terrorists. It is necessary to create the variable for host monitoring and punishment capacity to test the curvilinear hypothesis. The host capacity measure is created using the State Failure Project's magnitude of state failure measure.<sup>16</sup> The magnitude of state failure captures several aspects of  $\beta$  and  $\alpha$ . The measure is constructed by determining the stability of the government, the percentage of territory in which the government exercises effective control, and the strength of competing militant non-state actors. Each of these components captures the degree to which the host can exercise control over its territory. If the magnitude of failure is high, the host lacks the capability to use its monitoring resources efficiently. Failing hosts also lack the strength to punish terrorists sufficiently. However, if the host is not in failure, its capacity to police within its territory increases. The variable measures the magnitude of state failure on an ordinal scale from 0 to 6 within a particular state in a given year. Low scores indicate relative stability while higher scores indicate greater levels of state failure.

According to the model, very high and very low values of host capacity decrease the likelihood that agreements will be fulfilled. If the host's ability to monitor and punish is too low, the terrorists will defect from agreements. On the other hand, if the host severely constrains the terrorists, the target has an incentive to defect. The likelihood of fulfillment is therefore highest when host capacity is at median levels. To capture this, I first multiply the magnitude of failure score by  $-1$ . This rescales the indicator such that higher scores represent states that are not in failure and lower scores represent failing states. I next add the median value to the scores and square the term. With the new indicator, higher values of the squared term correspond to either excessively low degrees of state capacity or high degrees of state capacity. Low values of the squared term correspond to median levels of host capacity. Increasing the squared host capacity term should therefore decrease the likelihood that commitments are formed.

The next set of indicators is designed to test Hypotheses 2 and 3 by measuring the host's cooperation benefit  $C_h$  and the host's punishment value  $\alpha_h$ . I expect hosts to benefit from negotiations as their affinity for the target increases. I measure affinity using Altfeld and Bueno de Mesquita's measure of the similarity of alliance portfolios (1979; Bennett and Stam 2000). I expect that as alliance similarity increases, the likelihood of negotiation increases. The affinity variable is referred to as the strategic similarity of the target and hosts. Hypothesis 3 is tested using the number of peace years between the target and the host. A greater number of peace years suggest that military threats from the target are either not credible or simply unfeasible because of distance. In this scenario, if the host has no affinity for the target, there is no reason to expend resources constraining the terrorists. On the other hand, if targets can credibly initiate military conflict, hosts have incentives to control their terrorists. I therefore expect longer periods of peace to reduce the target's threat credibility, which in turn decreases the likelihood of successful negotiation.

<sup>16</sup> Daniel C. Esty, Jack Goldstone, Ted Robert Gurr, Barbara Harff, Pamela T. Surko, Alan N. Unger, and Robert Chen (1998) *The State Failure Task Force Report: Phase II Findings* (McLean: Science Applications International Corporation, 1998). To access the State Failure codebook, please see <http://www.cidcm.umd.edu/inscr/stfail/sfcodebk.htm>.

The last variable in the selection equation is the number of hostages. This variable provides a test for Hypothesis 6. I assume that higher numbers of hostages make the initial decision to refuse negotiation more costly for the target. In terms of the model, more hostages decrease the value of the  $SQ_s$  term. Therefore, as the number of hostages increases, the target should be more likely to negotiate. As the  $SQ_s$  term is only considered in the first stage of the game, the hostages variable is only in the selection equation. Following the commitment stage, the parties do not make decisions based on the value of the  $SQ_s$  term. Instead, the parties consider the discounted value  $\delta SQ$  when considering whether or not to fulfill their agreements. As there is no indicator for either side's discount parameter, I only include the hostages variable in the selection equation. Therefore, the hostages variable serves as an exclusion restriction.<sup>17</sup> The fulfillment equation is specified as follows:

Fulfill = State Sponsorship + Host Capacity<sup>2</sup> + Strategic Similarity + Peace Years.

The fulfillment equation is designed to test Hypotheses 1 and 2. The first measure in the fulfillment equation is the presence or absence of state sponsorship. I create a dichotomous variable identifying whether or not the host state is listed as a sponsor by the U.S. Department of State's *Patterns of Global Terrorism* (USDS 1995). State sponsors should increase the likelihood that agreements are fulfilled.

The host capacity<sup>2</sup> variable is also included in the fulfillment equation.<sup>18</sup> According to the model, very high and very low values of host capacity decrease the likelihood that agreements will be fulfilled. If the host's ability to monitor and punish is too low, the terrorists will defect from agreements. On the other hand, if the host severely constrains the terrorists, the target will have an incentive to defect. The likelihood of fulfillment is therefore highest when host capacity is at median levels. Strategic similarity and peace years are also included in the fulfillment equation. Increasing values of the strategic similarity variable should increase the likelihood of negotiation success while peace years may decrease the likelihood of negotiation success.

## Results

The statistical test generally supports the theoretical expectations (Table 1).<sup>19</sup> To generate baseline predictions of both commitment and fulfillment, I hold all continuous variables constant at their means and set state sponsorship to 0. Each variable is then increased by one standard deviation to demonstrate their impact on the probability of commitment and fulfillment to occur. The statistical model estimates a baseline probability of .28 for commitment formation. If a commitment is formed, the both sides adhere to the agreement with a baseline probability of .05.

Hypotheses 4 and 6 receive support from the statistical test. The host capacity indicators demonstrate that if the host's ability to monitor and punish its terrorists is too low, the target should be unwilling to form commitments. When host capacity is moved from its mean baseline value of 1.33 to 2.6, the likelihood of commitment increases to 0.38. This is supportive of the theory's claim that targets will only form commitments if the host has some ability to monitor and enforce. However,

<sup>17</sup> Several robustness tests were conducted to ensure that the hostages variable is an appropriate exclusion restriction. These tests are available from the author.

<sup>18</sup> Ideally, the fulfillment equation would include both host political capacity<sup>2</sup> and the scaling parameter of host political capacity. However, due to the sample size, the collinearity between host capacity<sup>2</sup> and the scaling parameter is severely problematic. Theoretically, the squared term matches the model's intuition. I therefore include only the squared term in the fulfillment equation. Separate tests were conducted in which the squared term was replaced with host capacity. The results still matched the theoretical expectations.

<sup>19</sup> Although the coefficient for Mill's ratio is not statistically significant, the heckman probit procedure remains appropriate theoretically given the two stages of the game theoretic model. To examine the impact of the variables, Mill's Ratio is held at 0.9005.



TABLE 1. Commitment and Fulfillment of Obligations During Terrorist Events

Variable	$\beta$ (SE)	95% Confidence Interval		$\Delta Pr$ 1 SD
<i>Commitment stage</i>				
Commitment Constant	- 0.668 (.127)	- 0.92	- 0.42	-
Host State Capacity	0.460 (.053)***	0.19	0.79	+ .10
Host State Capacity <sup>2</sup>	- 0.134 (.053)**	- 0.24	- 0.03	-
Strategic Similarity	0.830 (.391)**	0.06	1.60	+ .03
Peace Years	- 0.012 (.005)**	- 0.02	0.00	- .01
Number of Hostages	0.004 (.001)***	0.00	0.01	+ .09
<i>Fulfillment stage</i>				
Fulfillment Constant	- 1.06 (.165)	- 1.38	- .74	-
State Sponsorship	1.34 (.600)**	0.17	2.51	+ .23
Host State Capacity <sup>2</sup>	- 0.086 (.039)**	- 0.16	- .01	- .03
Strategic Similarity	1.49 (.570)***	0.37	2.61	+ .04
Peace Years	- 0.046 (.019)***	- 0.08	- 0.01	- .03
$\rho$	1.47 (.996)	- 0.44	0.997	-

Log likelihood: - 250.3975.

N: 325.

\*\* $p < .05$ ; \*\*\* $p < .01$ .

Hypothesis 5 states that if the ability of hosts to monitor and punish is too high, terrorists will refuse to negotiate. This proposition also receives support from the direction of the host capacity<sup>2</sup> term. The squared term indicates that if there are very high constraints, negotiation is more likely to fail. Groups will avoid agreements that entrap them into fulfilling regardless of the behavior of the target. The host capacity variables support the hypothesis that commitments will be formed if hosts are strong enough to monitor and punish, but do not have excessive abilities to do so.

Hypotheses 2 and 3 are also supported by the test. As the strategic similarity between the target and the host increases, targets and terrorists are more likely to form commitments. An increase in strategic similarity from the mean level of 0.04 to 0.25 increases the probability of commitment formation from 0.28 to 0.31, an 11% increase. The strategic similarity indicator strongly supports the theoretical expectations. Additionally, the peace years variable also confirms the expectations. An increase in peace years by 20.42 years, or one standard deviation, decreases the likelihood of commitments by 0.01. This is not a strong substantive effect, but the result does support the claim that absent affinity, hosts that do not face negative sanctions have no reason to facilitate peace.

Hypothesis 5 also receives empirical support. The hostages variable is both positive and significant. As the number of hostages increases, targets are more willing to bargain. If the number of hostages is increased from the mean of 30 by one standard deviation to 54, the likelihood of commitment increases to 0.37. This represents a 32% increase, supporting the theoretical expectations.

Hypotheses 1 and 2 receive substantial support from the fulfillment equation. The test's most interesting finding concerns the state sponsorship variable. State sponsorship is both significant and positive. According to this result, state sponsors contribute *positively* to the implementation of agreements. This supports the claim that state sponsors make ideal guarantors for state bargaining with terrorists. Taken together, successful implementation occurs between states and independent groups with probability .05. If the terrorists are state sponsored, this fulfillment probability increases to .28. The results show that negotiations involving state sponsored terrorists are 460% more likely to succeed than negotiations with independent groups. This supports the theoretical expectation in addition to revealing a somewhat counterintuitive finding.



The host capacity<sup>2</sup> term is significant and in the anticipated direction. If host capacity moves away from median values, the likelihood that agreements will be fulfilled decreases. Terrorists will defect if host capacity is too low while targets defect if host capacity is too high. If the squared term is increased from 1.77 by one standard deviation to 5.4, the likelihood of fulfillment decreases from 0.05 to 0.02. This indicates that if the host's capacity moves one standard deviation from the mean in either direction, the likelihood of fulfillment decreases by 60%. The results support the hypothesis that hosts with moderate capabilities are ideal for facilitating cooperation.

Hypothesis 4 is supported by the strategic similarity measure. According to the theory, the amount of resources devoted to monitoring and enforcement should increase  $\beta E$ , which in turn increases the probability of compliance. According to the results, if strategic similarity is increased by one standard deviation over the mean, the likelihood of fulfillment increases from 0.05 to 0.09, an 80% increase.

The results are generally supportive of the formal model. If hosts are capable and willing to enforce against terrorists, but only to a moderate degree, targets and terrorist groups are more likely to form agreements. Overall, the empirical results generally support the theoretical expectations.

### Conclusion

This paper attempts to identify how terrorists overcome the problem of credible commitment. The inability of terrorists to demonstrate credibility prevents negotiation from taking place, even though negotiation may make both sides better off. Unless terrorists develop a reputation for trustworthiness, pledges by terrorists to honor commitments should be viewed as cheap talk and targets will refuse to negotiate. This paper argues that under certain conditions, constraints from a host state might allow transnational terrorists to establish credibility in negotiation. While unconstrained terrorists may defect from agreements without cost, constrained terrorists face punishment from host states that have an interest in pursuing a peaceful settlement. As host states can be punished for their terrorists' activities, hosts have incentives to resolve terrorist events peacefully. To ensure a negotiated settlement, host states may threaten to punish terrorists that break agreements. If the host threatens punishment, the target recognizes that terrorists now have an incentive to fulfill their agreements. Therefore, targets may be more willing to attempt negotiation with constrained terrorists.

However, we see that terrorists should not favor strong host institutions that completely tie their hands. If targets recognize that terrorists that are heavily constrained will always fulfill their agreements, targets may try to sucker the terrorists. As a result, terrorists that are heavily constrained may refuse to form agreements at all. From the model, we see that the optimal host for maintaining cooperation is a moderate host, such as a state sponsor. The host state must have the capability to punish the terrorists to prevent defection, but must also allow the terrorists enough freedom such that the terrorists are not entrapped into agreements.

Several studies in terrorist literature on terrorism assume that terrorists operate free from any institutional constraints. This study adds to the terrorism literature by challenging this assumption. The conclusion is that we should examine what constraints terrorists face and how variation in such constraints affect the terrorists' incentive structure. While freedom from authority is seen as a virtue for terrorists, a group that favors negotiation might be willing to sacrifice this freedom in favor of constraints from a host in order to overcome the problem of credible commitment. This insight further demonstrates that in addition to increasing terrorist capability, sponsorship may serve the secondary function of improving terrorist credibility in negotiation.

**Mathematical Appendix**

*Assumptions:*

- i.  $C_s + C_t = 1$
- ii. For target,  $1 \geq SQ_s \geq \delta SQ_s \geq 0$
- iii. For terrorists,  $1 \geq SQ_t \geq \delta SQ_t \geq 0$

*Derivation of Hypothesis 1:* I first examine the condition necessary to avoid renegeing as the target’s dominant strategy. If  $\delta SQ_s > \beta EC_s$ , the target always reneges. Using comparative statics, we see that as the value of both  $\beta$  and  $E$  increases, the target is less likely to have a dominant strategy to defect. Terrorists have a dominant strategy to defect if  $C_t < \beta E(C_t - \alpha) + (1 - \beta E)$ . Increasing the values of  $\beta$ ,  $E$ , and  $\alpha$  all decrease the utility of terrorists for playing renege. This indicates that greater host monitoring and enforcement power decreases the likelihood that terrorists will have a dominant strategy to renege.

If both sides’ dominant strategies are removed, the players will adopt mixed strategies. Where the target Fulfills with probability  $p$  and the terrorists fulfill with probability  $q$ , the mixed strategy equilibrium of the fulfillment subgame is:

- i. Target :  $\frac{\delta SQ_t}{\delta SQ_t + \beta E \alpha_t - C_s}$  (Fulfill),  $1 - \frac{\delta SQ_s - \beta E \alpha_s}{\delta SQ_s - \beta E \alpha_s - C_s}$  (Reneg)
- ii. Terrorists :  $\frac{\delta SQ_s - \beta E \alpha_s}{\delta SQ_s - \beta E \alpha_s - C_t}$  (Fulfill),  $1 - \frac{\delta SQ_t - \beta E \alpha_t}{\delta SQ_t - \beta E \alpha_t - C_t}$  (Reneg).

Although host intervention eliminates (Reneg, renege) as dominant strategies in the fulfillment subgame, we see from the mixed strategies that host intervention has a curvilinear effect. As the value of  $\alpha_t$  increases, the target becomes less likely to fulfill in mixed strategies. Host intervention is necessary to produce mixed strategies, but excessive host intervention induces the target to defect. We can therefore conclude that the likelihood of successful negotiation is highest at median values of host monitoring and enforcement power.

*Derivation of Hypothesis 2:* If the players adopt mixed strategies in the fulfillment subgame, the host is no longer assured of receiving its benefit  $C_h$ . The host will only receive its benefit if the target receives its negotiation benefit. Given this new risk, the host must weigh the value of no intervention versus its expected value for the fulfillment subgame. The host will therefore cooperate if

$$pq(C_h - E) + p(1 - q)[\beta E(C_h - E) + (1 - \beta E)(C_h - E - \alpha_h)] + (1 - p)(-E) \geq 0.$$

From this inequality, we can see that as the value of  $C_h$  increases, the host is more likely to intervene, which allows successful negotiation to occur with some positive probability.

*Derivation of Hypothesis 3:* Using the above equation, we can solve for the optimal level of  $E$  for the host. Solving for  $E$  gives

$$E^* = \frac{1}{2(C_h + \alpha_t - 1)\alpha_t\beta^2} (-1 - \beta + C_h\beta + \alpha_h\beta - \alpha_t\beta + C_h\alpha_t\beta + \alpha_h\alpha_t\beta + \delta SQ_s + \sqrt{(-1 + (-1 + C_h + \alpha_h)(1 + \alpha_t)\beta + \delta SQ_s)^2 - 4(-1 + C_h + \alpha_h)\alpha_t\beta^2(-1 + \alpha_h + C_h\delta SQ_s)}).$$

Because of the complications of this equation, deriving hypotheses analytically is somewhat difficult. However, by holding all of the variable at reasonable values, I plot the effects of  $\alpha_h$  to generate the hypotheses (Fig. A1):

From the plot, we see that as  $\alpha_h$  increases, the value of  $E$  also increases. As the host’s punishment for negotiation failure becomes increasingly severe, the host will

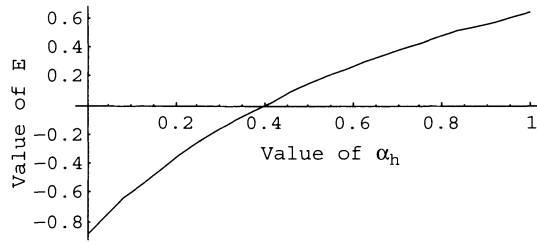


FIG. A1. Comparative Statics  
 Values:  $C_h = 2$ ;  $\beta = 0.6$ ;  $\alpha_t = 0.6$ ;  $\delta SQ_s = 0.3$

devote greater effort into policing, which establishes greater credibility for the terrorists. Additionally, we see evidence for the claim that a sufficient level of punishment is needed to compel the host to serve as a guarantor. In this example, unless  $\alpha_h > 0.4$ , the host sets  $E < 0$ , meaning that the host devotes no resources to policing.

*Derivation of Hypotheses 4 and 5:* For the target to propose  $C_t^*$ :

$$pq(C_s) + (1-p)q(1) + p(1-q)(\beta E\alpha_s) + (1-p)(1-q)\delta SQ_s \geq SQ_s.$$

Without host intervention, both the target and the terrorists will refuse to cooperate. Therefore,  $p = 0$  and  $q = 0$ . As by assumption,  $\delta SQ_s < SQ_s$ , the target will refuse to negotiate. However, if the host intervenes to induce mixed strategies, the value of the left-hand side of the equation increases. Therefore, we can conclude that host intervention increases the willingness of target states to form agreements. This leads to Hypothesis 4, stating that the target's likelihood of negotiation will increase as the host's ability to monitor and punish increases. Using this same expression, we see that as the value of  $SQ_s$  decreases, the target is more willing to negotiate. Therefore, Hypothesis 5 states that as  $SQ$  decreases, targets are more likely to negotiate.

*Derivation of Hypothesis 6:* For the terrorists to agree to negotiate:

$$pq(C_t) + (1-p)q(0) + p(1-q)[\beta E(1-\alpha_t) + (1-\beta E\alpha_t)] + (1-p)(1-q)\delta SQ_t \geq SQ_t$$

From the previous derivation of mixed strategies, we know that as  $\alpha_t \rightarrow 1$ , the target plays Fulfill with less frequency in mixed strategies. Therefore, as  $\alpha_t$  increases, the value of the left-hand side of the expression decreases. As the terrorists are more likely to be suckered in mixed strategies with high values of  $\alpha_t$  and this is less preferable than the status quo, terrorists are more likely to reject bargaining.

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